

**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

REMBRANDT WIRELESS
TECHNOLOGIES, LP,

v.

APPLE INC.

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CASE NO. 2:19-CV-25-JRG

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

Before the Court is the Opening Claim Construction Brief (Dkt. No. 73) filed by Plaintiff Rembrandt Wireless Technologies, LP (“Plaintiff” or “Rembrandt”). Also before the Court are the Responsive Claim Construction Brief (Dkt. No. 79) filed by Defendant Apple Inc. (“Defendant” or “Apple”) as well as Plaintiff’s reply (Dkt. No. 81).

The Court held a hearing on December 2, 2019.

I. BACKGROUND

Plaintiff alleges infringement of United States Patents No. (“the ’580 Patent”) and 8,457,228 (“the ’228 Patent”) (collectively, “the patents-in-suit”). (Dkt. No. 73, Exs. 1–2).

The patents-in-suit are both titled “System and Method of Communication Using At Least Two Modulation Methods.” The ’580 Patent issued on September 20, 2011, and bears a filing date of August 19, 2009. The ’228 Patent issued on June 4, 2013, and bears a filing date of August 4, 2011. The ’228 Patent is a continuation of the ’580 Patent. Both patents-in-suit bear an earliest priority date of December 5, 1997.

Plaintiff submits that the patents-in-suit “cover a device that communicates using different types of modulation methods” and relate to the well-known “Bluetooth” wireless communication standards. *See* Dkt. No. 73 at 1. The Abstract of the ’580 Patent is representative and states:

A device may be capable of communicating using at least two type types [sic] of modulation methods. The device may include a transceiver capable of acting as a master according to a master/slave relationship in which communication from a slave to a master occurs in response to communication from the master to the slave. The master transceiver may send transmissions discrete transmissions [sic] structured with a first portion and a payload portion. Information in the first portion may be modulated according to a first modulation method and indicate an impending change to a second modulation method, which is used for transmitting the payload portion. The discrete transmissions may be addressed for an intended destination of the payload portion.

The Court previously construed terms in the patents-in-suit in *Rembrandt Wireless Technologies, LP v. Samsung Electronics Co., Ltd., et al.*, No. 2:13-CV-213, Dkt. No. 114, 2014 WL 3385125 (E.D. Tex. July 10, 2014) (“*Samsung*”). A jury in *Samsung* found infringement and no invalidity. The Court denied a motion for judgment as a matter of law as to obviousness. No. 2:13-CV-213, Dkt. No. 352, at 5–7 (E.D. Tex. Feb. 17, 2016) (“*Samsung JMOL*”). The Court “decline[d] to grant new trial on . . . re-urged issues of claim construction.” *Id.* at 8. The Federal Circuit affirmed as to claim construction and obviousness and remanded as to issues related to damages. *See Rembrandt Wireless Techs., LP v. Samsung Elecs. Co.*, 853 F.3d 1370 (Fed. Cir. 2017).

II. LEGAL PRINCIPLES

It is understood that “[a] claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

“In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background

science or the meaning of a term in the relevant art during the relevant time period.” *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the ‘evidentiary underpinnings’ of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.” *Id.* (citing 517 U.S. 370).

To ascertain the meaning of claims, courts look to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent’s claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* “One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.” *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee’s invention. Otherwise, there would be no need for claims. *SRI Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This Court’s claim construction analysis is substantially guided by the Federal Circuit’s decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Id.* at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to, and intended to be read by, others skilled in the particular art. *Id.*

Despite the importance of claim terms, *Phillips* made clear that “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of “a fully integrated written instrument.” *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314–17. As the Supreme Court stated long ago, “in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier

observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the United States Patent and Trademark Office (“PTO”) understood the patent. *Id.* at 1317. Because the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*; see *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (noting that “a patentee’s statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation”).

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes.

Phillips, 415 F.3d at 1319–24. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323–25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

In general, prior claim construction proceedings involving the same patents-in-suit are “entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*.” *Maurice Mitchell Innovations, LP v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006) (Davis, J.); *see TQP Development, LLC v. Intuit Inc.*, No. 2:12-CV-180, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) (“[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so.”); *see also Teva*, 135 S. Ct. at 839–40 (“prior cases will sometimes be binding because of issue preclusion and sometimes will serve as persuasive authority”) (citation omitted); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting “the importance of

uniformity in the treatment of a given patent”) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996)).

III. AGREED TERMS

In their September 9, 2019 P.R. 4-3 Joint Claim Construction Statement, the parties submitted: “The Parties have not agreed on any constructions. However, the Parties agree that the terms that are not proposed for construction . . . do not require construction.” (Dkt. No. 70, at 2.)

IV. DISPUTED TERM

A. “modulation method [] of a different type” and “different types of modulation methods”

<p style="text-align: center;">“modulation method [] of a different type” (’580 Patent, Claims 1, 58)</p> <p style="text-align: center;">“different types of modulation methods” (’228 Patent, Claim 1)</p>	
Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“different families of modulation techniques, such as the FSK family of modulation methods and the QAM family of modulation methods”	“different families of modulation techniques, such as the FSK family of modulation methods and the QAM family of modulation methods, wherein different families may have overlapping characteristics”

(Dkt. No. 70, Ex. A, at 5; Dkt. No. 88, Ex. A, at 4–9.)

“The parties agree that the disputed claim term ‘different type’ should be interpreted the same in both the ’580 patent and the ’228 patent.” (Dkt. No. 79, at 5 n.2.)

(1) The Parties’ Positions

Plaintiff argues that “Rembrandt proposes the same construction adopted by this Court in the *Samsung* litigation that was affirmed by the Federal Circuit,” and “[t]his construction is a

direct quote from the patentee during prosecution.” (Dkt. No. 73, at 1.) Plaintiff also argues that “Apple’s additional language is a significant departure from the prior construction, and it is motivated by an invalidity argument this Court and the Federal Circuit rejected in the *Samsung* litigation.” (*Id.*)

Defendant responds that the prior construction “should be supplemented to address a dispute between the parties here about claim scope that was neither raised nor resolved during claim construction in the *Samsung* litigation.” (Dkt. No. 79, at 1.) Defendant argues: “Rembrandt restricts the scope of this claim language to exclude modulation methods with *any* overlapping characteristic, even if those methods also use non-overlapping characteristics. Apple’s view, however, is that such modulation methods can still be of ‘different types.’” (*Id.*) Defendant urges that “[t]he intrinsic evidence—including the claim language, the specifications, the original prosecution, and the IPR [(*inter partes* review)] proceedings—all show that ‘different types’ of modulation may have overlapping characteristics.” (*Id.*, at 5.)

Plaintiff replies that the Federal Circuit expressly agreed with the Court’s finding in *Samsung* that “any dispute regarding whether particular modulation techniques are in different families is a factual one.” (Dkt. No. 81, at 1 (quoting *Rembrandt*, 853 F.3d at 1378–79).) Plaintiff also argues that Defendant’s claim differentiation argument “treads well-worn ground,” and “Rembrandt has not excluded any specification embodiments.” (Dkt. No. 81, at 3, 6.) Further, Plaintiff argues that the prosecution history does not support Defendant’s position because Plaintiff relies on an express definition and does not assert any disclaimer. (*Id.*, at 7–8.) Finally, Plaintiff cites PTO reexamination proceedings and submits that “[t]he fact that the Patent Office agrees with Rembrandt’s construction is highly persuasive.” (*Id.*, at 9.)

At the December 2, 2019 hearing, Plaintiff submitted that the Federal Circuit affirmed that whether modulation types are “different” is a factual issue. Plaintiff emphasized that the affirmed construction does not preclude Defendant from cross-examining Plaintiff’s expert at trial and presenting contrary opinions and arguments. Defendant responded that the issue of overlapping characteristics was not raised in the *Samsung* claim construction proceedings. Defendant argued that Plaintiff improperly attempts to narrow the scope of the claims by carving out overlapping characteristics. Defendant also argued that because obviousness involves factual issues regardless of how the Court construes the claims, the Federal Circuit’s analysis regarding obviousness does not preclude this Court from resolving the present claim construction dispute.

(2) Analysis

Claim 1 of the ’580 Patent is representative and recites (emphasis added):

1. A communication device capable of communicating according to a master/slave relationship in which a slave communication from a slave to a master occurs in response to a master communication from the master to the slave, the device comprising:

a transceiver, in the role of the master according to the master/slave relationship, for sending at least transmissions modulated using at least two types of modulation methods, wherein the at least two types of modulation methods comprise *a first modulation method and a second modulation method, wherein the second modulation method is of a different type than the first modulation method*, wherein each transmission comprises a group of transmission sequences, wherein each group of transmission sequences is structured with at least a first portion and a payload portion wherein first information in the first portion indicates at least which of the *first modulation method* and the *second modulation method* is used for modulating second information in the payload portion, wherein at least one group of transmission sequences is addressed for an intended destination of the payload portion, and wherein for the at least one group of transmission sequences:

the first information for said at least one group of transmission sequences comprises a first sequence, in the first portion and modulated according to the *first modulation method*, wherein the first sequence indicates an impending change from the *first modulation method* to the *second modulation method*, and

the second information for said at least one group of transmission sequences comprises a second sequence that is modulated according to the *second modulation method*, wherein the second sequence is transmitted after the first sequence.

“‘Modulation’ . . . is defined as a process of varying some characteristic of a carrier signal.” *Samsung* at 21 (citing evidence).

In *Samsung*, the parties disputed whether the “different type” limitations should be interpreted in accordance with a particular statement by the patentee during prosecution. *See Samsung* at 26. During prosecution, the patentee amended claims so as to add the word “type.” (See Dkt. No. 79, Ex. H, Sept. 1, 2010 Office Action; *id.*, Ex. I, Mar. 1, 2011 Reply Pursuant to 37 CFR § 1.111 at 7–11 (RIP19060–64).) The patentee stated:

Applicant thanks Examiner Ha for the indication that claims 1–18 and 37–57 are allowed (office action, p. 7). Applicant has further amended claims 1–2, 9–15, 18, 37–38, and 45–46 with additional recitations to more precisely claim the subject matter. For example, the language of independent claim 1 has been clarified to refer to two *types* of modulation methods, *i.e.*, different families of modulation techniques, such as the FSK [(frequency shift keying)] family of modulation methods and the QAM [(quadrature amplitude modulation)] family of modulation methods.

Id. at 20 (RIP19073).

“[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see Phillips*, 415 F.3d at 1316.

In *Samsung*, this Court found:

On balance, the patentee’s lexicography should be given effect in the Court’s construction. *See Vitronics*, 90 F.3d at 1582; *see also Abbott Labs. [v. Novo Pharm Ltd.]*, 323 F.3d [1324,] 1327, 1330 [(Fed. Cir. 2003)]; *CCS Fitness[, Inc. v. Brunswick Corp.]*, 288 F.3d [1359,] 1366 [(Fed. Cir. 2002)]; *Advanced Fiber Techs. [(AFT) Trust v. J & L Fiber Servs., Inc.]*, 674 F.3d [1365,] 1374 [(Fed. Cir. 2012)]. As to Defendants’ concerns, any dispute regarding whether accused modulation techniques are from different “families” is a factual dispute regarding infringement rather than a legal dispute for claim construction. *See PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) (noting that “the

task of determining whether the construed claim reads on the accused product is for the finder of fact”).

Nonetheless, although Plaintiff proposes merely “different families of modulation techniques,” the patentee’s definition in the prosecution history includes examples, namely “the FSK family of modulation methods and the QAM family of modulation methods.” . . . 3/1/2011 Reply Pursuant to 37 CFR § 1.111 at 20 These examples provide useful context for understanding the phrase “different families” and, having been provided as part of the patentee’s definition, should be included in the Court’s construction.

The Court accordingly hereby construes “modulation method [] of a different type” and “different types of modulation methods” to mean “different families of modulation techniques, such as the FSK family of modulation methods and the QAM family of modulation methods.”

Samsung at 28–29 (emphasis omitted; footnote omitted).

The Court denied Samsung’s motion for judgment as a matter of law as to obviousness and Samsung’s motion for a new trial. *See Samsung JMOL* at 5–8.

The Federal Circuit “agree[d] with the district court’s challenged claim construction,” finding:

We review claim constructions based solely on the intrinsic record, as here, de novo.

The district court arrived at its construction relying on the applicant’s characterization of the “different types” term in the prosecution history.

* * *

Samsung contends that the plain claim language requires only that the different types of modulation methods be “incompatible” with one another. According to Samsung, the claims cover devices that modulate signals using the same family of modulation methods (for example, FSK modulation), but operating with different amplitudes between modems. Samsung asserts that, because modulating using different amplitudes makes the devices incompatible, this arrangement embodies “different types” of modulation.

We disagree with Samsung and adopt the construction entered by the district court. While the specification is the principal source of the meaning of a disputed term, the prosecution history may also be relevant. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Here, the clearest

statement in the intrinsic record regarding the meaning of the “different types” limitation is the descriptive statement the applicant made to the examiner when he inserted the limitation into the claims. Samsung’s arguments to the contrary do not diminish this unambiguous statement in the prosecution history.

* * * The context here strongly supports the conclusion that Rembrandt used “i.e.” to define the “different types” limitation because Rembrandt used it to describe to the examiner a new limitation it had inserted to further limit its claims.

* * *

We therefore agree with the construction entered by the district court that the term “modulation method [] of a different type” means “different families of modulation techniques, such as the FSK family of modulation methods and the QAM family of modulation methods.”

Rembrandt, 853 F.3d at 1375–77 (citations omitted). The Federal Circuit also was “not convinced that there would necessarily be a conflict with claim 43 under the adopted construction,” “[n]or do we find that the specification is at odds with the prosecution history definition.” *Id.* at 1377; *see Baran v. Med. Dev. Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010) (“It is not necessary that each claim read on every embodiment.”).

The Federal Circuit further addressed claim construction when affirming this Court’s denial of Samsung’s motion for judgment as a matter of law as to obviousness:

To allege obviousness, Samsung presented at trial a prior art combination consisting of U.S. Patent No. 5,706,428 (“Boer”) as the primary reference and an article by Bhargav P. Upender and Philip J. Koopman, Jr. (“Upender”) as a secondary reference. According to Samsung, the DBPSK and PPM/DQPSK modulation methods discussed in Boer are in “different families,” and are therefore different types of modulation methods under the district court’s construction. Samsung’s expert, Dr. Goodman, testified that, much like the QAM and PSK modulation methods that the district court specifically noted were in different families, Boer’s cited modulation methods alter different sets of characteristics: PPM/DQPSK alters phase and position, but DBPSK alters only phase.

On the other hand, Rembrandt’s infringement expert, Dr. Morrow, testified that, in his experience, modulation methods are in different families if they have “no overlapping characteristics.” J.A. 1083, 18:13–24. Rembrandt therefore argued

that PPM/DQPSK and DBPSK were not in different families because they both altered phase.

The jury was, of course, free to credit Dr. Morrow's testimony and reject Dr. Goodman's. Samsung argues, however, that Dr. Morrow's testimony, and Rembrandt's argument based on it, constitute an improper reinterpretation of the court's "different types" construction. *Samsung urges that modulation methods can have some overlapping characteristics and still be in different families, as required by the court's construction. Samsung couches this argument as a claim construction issue. We disagree. As the district court correctly noted, any dispute regarding whether particular modulation techniques are in different families is a factual one.* "[A] sound claim construction need not always purge every shred of ambiguity," including potential ambiguity arising from "the words a court uses to construe a claim term." *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1318 (Fed. Cir. 2016) (citation omitted). "Such an endeavor could proceed ad infinitum." *Id.*

Contrary to the way Samsung has cast the issue, whether Boer meets the "different types" limitation under the court's construction is a factual question. Particularly with regard to obviousness, it is a factual question going to the scope and content of the prior art. We review such factual questions underlying obviousness for substantial evidence. Taken with Dr. Morrow's testimony, the fact that Boer's DBPSK and PPM/DQPSK modulation methods both alter phase is substantial evidence to support the jury's presumed fact finding that Boer did not teach the "different types" limitation.

Rembrandt, 853 F.3d at 1378–79 (emphasis added; citations omitted; footnote omitted).

The Federal Circuit has "recognize[d] the national *stare decisis* effect that [its] decisions on claim construction have." *Ottah v. Fiat Chrysler*, 884 F.3d 1135, 1140 (Fed. Cir. 2018) (quoting *Key Pharm. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998)).

The Court rejects Defendant's proposal to modify the construction affirmed by the Federal Circuit. Defendant argues that "the precise 'factual' question the Court addressed was 'whether Boer [a prior art reference] meets the "different types" limitation under the court's construction.'" (Dkt. No. 79, at 3–4 (quoting *Rembrandt*, 853 F.3d at 1379).) Yet, *Rembrandt* affirmed the construction and stated, without limitation, that "[a]s the district court correctly

noted, *any* dispute regarding whether particular modulation techniques are in different families is a factual one.” *Rembrandt*, 853 F.3d at 1378–79 (emphasis added).

Moreover, even if the Court were to consider Defendant’s present arguments, Defendant fails to justify modifying the affirmed construction.

Defendant emphasizes dependent Claim 46 of the ’228 Patent, which recites that “at least one of said first or second modulation methods implements discrete multitone [DMT] modulation.” Defendant submits that because DMT modifies all three of phase, frequency, and amplitude, DMT could not be of a “different type” than any other modulation method unless different families of modulation techniques can have overlapping characteristics. (Dkt. No. 79, at 6.) Defendant concludes that the “different types” limitation in Claim 26 of the ’228 Patent (from which Claim 46 depends) “must allow for ‘different types’ of modulation methods to have overlapping characteristics.” (*Id.* (citing *Laitram Corp. v. NEC Corp.*, 62 F.3d 1388, 1392 (Fed. Cir. 1995) (“dependent claims can aid in interpreting the scope of claims from which they depend”))). Defendant also cites disclosure in the specification regarding DMT. *See* ’580 Patent at 2:1–5.

Plaintiff counters that DMT does not necessarily modulate all of phase, amplitude, and frequency (Dkt. No. 81, at 4), and Defendant submits no persuasive evidence to the contrary. Moreover, even assuming that DMT modulates phase, amplitude, and frequency, “[i]t is not necessary that each claim read on every embodiment,” *Baran*, 616 F.3d at 1316, and the Federal Circuit noted in *Rembrandt* that arguments based on claim differentiation may be overridden by a definition set forth in the prosecution history. 853 F.3d at 1377. Analogously, here, any purported inconsistencies based on dependent claims do not warrant departing from the definition affirmed by the Federal Circuit.

Defendant's reliance on the recital in dependent Claim 43 of the '228 Patent that "at least one of said first or second modulation methods implements phase modulation" is unavailing. Indeed, the Federal Circuit addressed this issue. *See id.* Defendant's similar reliance on dependent Claim 44 is likewise unavailing.

Defendant further argues that the specification and the provisional patent application classify certain modulation methods as being in separate "high-performance" and "low-performance" modulation "families" even though modulation methods within each such family may have overlapping characteristics. (Dkt. No. 79, at 7–8; *see* '580 Patent at 2:1–8; *see also* Dkt. No. 79, Ex. J, U.S. Provisional Patent Application No. 60/067,562 at 3 (RIP7851).) Admittedly, the Background section of the specification refers to a problem that "communication systems comprised of both high performance and low or moderate performance applications can be very cost inefficient to construct," and "[a]ll users in the system will generally have to be equipped with a high performance modem to ensure modulation compatibility," which is expensive. '580 Patent at 1:66–2:15. The Background section concludes: "Accordingly, what is sought, and what is not believed to be provided by the prior art, is a system and method of communication in which multiple modulation methods are used to facilitate communication among a plurality of modems in a network, which have heretofore been incompatible." *Id.* at 2:16–20.

This argument that the term "type" can refer to high or low "performance," however, runs contrary to the examples set forth in the prosecution history definition that the Federal Circuit affirmed. That is, the patentee contrasted "different families of modulation *techniques*, such as the FSK [(frequency shift keying)] family of modulation methods and the QAM [(quadrature amplitude modulation)] family of modulation methods," and the patentee did not refer to

“performance.” (Dkt. No. 79, Ex. I, Mar. 1, 2011 Reply Pursuant to 37 CFR § 1.111 at 20 (RIP19073) (emphasis added).) Thus, the patentee contrasted FSK and QAM based on modulation techniques, not necessarily based on “performance.” Defendant’s reliance on dependent Claims 6–9 of the ’228 Patent, which recite “high” and “low” data rate applications, is likewise unavailing. Indeed, the explicit recitals of “high data rate” and “low data rate” in these *dependent* claims could just as well be interpreted as undermining Defendant’s apparent position that “types” or “families” are defined in terms of data rates. *See Phillips*, 415 F.3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”). Also, disclosures referring to modulation methods as “type A” and “type B,” cited by Defendant, do not undercut the express definition or the Federal Circuit’s analysis. *See* ’580 Patent at 5:47–56.

Defendant argues that the prosecution history cited by Plaintiff contains no disclaimer to support Plaintiff’s interpretation of “different types” as having a negative limitation that precludes any overlapping characteristics. Neither Plaintiff nor the Federal Circuit, however, relied upon any disclaimer in this regard. Instead, Plaintiff proposes, as the Federal Circuit affirmed, that “any dispute regarding whether particular modulation techniques are in different families is a factual one.” *Rembrandt*, 853 F.3d at 1378–79.

At the December 2, 2019 hearing, Defendant urged that when the Federal Circuit referred to “any dispute,” *id.* at 1378, the Federal Circuit did so in the context of a particular obviousness issue in that case. Defendant emphasized that this statement appeared in a section titled “II. Obviousness” (rather than in the section titled “I. Claim Construction”), and Defendant noted that the Federal Circuit subsequently stated: “Contrary to the way Samsung has cast the issue, whether Boer meets the ‘different types’ limitation under the court’s construction is a factual

question. *Particularly with regard to obviousness*, it is a factual question going to the scope and content of the prior art.” *Id.* at 1379 (emphasis added). Defendant’s arguments cannot be squared with the words set forth in *Rembrandt*. Not only did the Federal Circuit expressly agree with this Court that “*any* dispute regarding whether particular modulation techniques are in different families is a factual one,” the Federal Circuit “disagree[d]” with Samsung’s attempt to “couch[]” the issue of “overlapping characteristics” as a claim construction issue. *Id.* at 1378–79.

The parties further cite various proceedings before the PTO’s Patent Trial and Appeal Board (“PTAB”). Plaintiff cites *ex parte* reexamination proceedings involving the ’228 Patent. (See Dkt. No. 73, Ex. 12, at 145–46.) Defendant cites IPR proceedings in which Plaintiff referred to “three families” based, respectively, on phase, amplitude, and frequency. (See Dkt. No. 79, Ex. B, Apr. 24, 2015 IPR Hr’g Tr. at 88:8–89:2 (REM_USPTO_23578–79).)

The PTAB found, for example, that “[w]e interpret different ‘types’ of modulation methods as modulation methods that are incompatible with one another. Thus, contrary to Patent Owner’s construction, two modulation methods that are based on varying the same one of the frequency, amplitude, or phase of the carrier wave may be different ‘types’ of modulation methods.” (Dkt. No. 79, Ex. D, Sept. 17, 2015 Final Written Decision at 12; *see id.* at 11 (“[T]he ’580 patent does not draw distinctions between ‘families’ of modulation techniques directed to differences in modulation with respect to amplitude, phase, or frequency. Rather, the ’580 patent draws distinctions between relatively expensive high performance techniques and relatively inexpensive low performance techniques.”).)

Defendant also argues that “[t]he implication of [Plaintiff’s] three-family premise, and [Plaintiff’s] argument that QAM is part of two of those families, is that QAM itself is not a

family,” which Defendant argues is inconsistent with the Court’s construction. (Dkt. No. 79, at 14.)

The Federal Circuit in *Rembrandt* noted certain “related IPR proceedings” and found that those proceedings did not affect the relevant claim construction analysis. *See id.* at 1377 (“Samsung also mentions that in related IPR proceedings, the Patent Trial and Appeal Board adopted the broader construction Samsung argues for here. As Samsung admits, however, this construction does not bind our court. And the Board in IPR proceedings operates under a broader claim construction standard than the federal courts.”).

The various PTAB proceedings cited by the parties therefore do not significantly affect the Court’s analysis here. *See id.* Further, Defendant fails to demonstrate any purported inconsistency between the Court’s construction and Plaintiff’s statements, during IPR proceedings, regarding different families of modulation methods. (See Dkt. No. 79, Ex. B, Apr. 24, 2015 IPR Hr’g Tr. at 86:21–89:17 (REM_USPTO_23576–79).) Although Plaintiff explained that phase, amplitude, and frequency could define three families, Plaintiff also explained that families can be combined for a particular modulation method or group of methods. (See *id.* at 98:12–100:22 (REM_USPTO_23588–90).)


Based on all of the foregoing, the Court hereby construes **“modulation method [] of a different type”** and **“different types of modulation methods”** to mean **“different families of modulation techniques, such as the FSK family of modulation methods and the QAM family of modulation methods.”**

VI. CONCLUSION

The Court adopts the construction set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the parties are ordered

to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

So ORDERED and SIGNED this 15th day of January, 2020.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE